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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,045	11/13/2003	Shinichi Yoneda	36856.1144	7112

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EXAMINER

JONES, STEPHEN E

ART UNIT PAPER NUMBER

2817

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/706,045

Applicant(s)

YONEDA, SHINICHI

Examiner

Stephen E. Jones

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-12 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

The restriction requirement is deemed moot since all of the remaining claims read on the elected invention.

Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 5-8, and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (US2002/0079981) in view of Takase (JP2002-270465) (both of record).

Tanaka (e.g. Figs. 1-2) teaches a circulator including: a center electrode (21-23) assembly including a microwave ferrite (31) (Claim 11) and insulating films (26); side electrodes (24) are connected to the ends of the center electrodes; a metal case (Claim 7); the thickness of the components is in the micrometer range thus the size of the elements can be considered "about 40 micrometers" since about is a broad term (Claim 8); the electrodes can be made of e.g. Ag (see [0035]) (Claim 10); and the device is for communications devices (e.g. see [0004]) (Claim 12). Also, regarding Claims 5-6 the product by process limitations of being made by a photosensitive process is not given any patentable weight since only the final product structure is patentable in an

apparatus claim and especially since photosensitive material is removed in photosensitive manufacturing processes.

However, Tanaka does not teach that the ends of the electrodes connected to the side electrodes are thicker than the other portions of the center electrodes (Claim 1); that the thicker portion is in an opening provided in the periphery of the insulating films (Claim 2); or that the thickness is increased on an upper surface of the end (Claim 3).

Takase teaches that the connection of conductors sandwiched by insulating films and connected to sidewall connections can be made with the ends of the conductors having a thicker portion where the upper surface of the ends of the conductors are filling a gap formed in between the layers of insulating film (e.g. see Fig. 1).

It would have been considered obvious to one of ordinary skill in the art to have modified the Tanaka device to have included filled thicker end portions such as taught by Takase, because it would have provided the advantageous benefit of a simpler manufacturing process by the elimination of processing steps while also improving the electrical properties of the device (e.g. see [0007] of Takase).

3. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka (US2002/0079981) and Takase (JP2002-270465) as applied to claim 1 above, and further in view of Sreeram et al. (all of record).

Tanaka and Takase together teach a nonreciprocal device as described above. However, they do not teach a shrinkage prevention sheet on an upper or lower surface of the layer structure.

Sreeram provides the general teaching of a forming a multilayer substrate on a glass layer (e.g. see Col. 1, lines 31-36).

It would have been considered obvious to one of ordinary skill in the art to have included a glass layer such as taught by Sreeram under the multilayer substrate of the combination of Tanaka and Takase, because it would have provided the well-known advantageous benefit of suppressing shrinkage if firing of the multilayer substrate is used in the manufacturing process, thereby suggesting the obviousness of such a modification.

Response to Arguments

4. Applicant's arguments filed 1/29/07 have been fully considered but they are not persuasive.

Applicant argues that Takase does not teach that the electrodes 10 include any portion having a thickness greater than any other portion of electrode 10.

Applicant's argument is not persuasive. Takase clearly teaches an electrode 10 having a uniform thickness and further includes a thicker portion (12 in Fig. 1) that is continuous and on the same plane with the portion 10 and is also inside the substrate.

Applicant also argues that the Takase advantage as per the rejections of elimination of process steps and improving electrical properties has nothing to do with inner electrodes 10 and thus there is no advantage/motivation for the rejections.

This argument is also not convincing. As argued above, the end portion (12 in Fig. 1) is indeed an inner electrode and is an extension of the portion 10, thus

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suggesting the advantages that the thicker portion (12) provides as being obvious in combination with Tanaka as per the rejections.

Finally, Applicant argues with regard to the Sreeram reference as to Claim 1.

However, Sreeram is only applied in the rejections for its teachings as related to Claim 9 subject matter, thus the argument is not germane to the subject matter of the claim 1 being argued.

Allowable Subject Matter

5. Claim 4 remains objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen E. Jones whose telephone number is 571-272-1762. The examiner can normally be reached on Monday through Friday from 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on 571-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SEJ


STEPHEN E. JONES
PRIMARY EXAMINER